



UMaine is the perfect place for biofuel research because of the state's abundant natural resources. This new product could change the way we fuel our lives.”

Peter van Walsum

Associate Professor of Chemical and Biological Engineering



With a three-year, \$712,000 award from the U.S. Department of Energy, University of Maine chemical engineers Peter van Walsum and Clay Wheeler are conducting research to convert pulp mill and marine algae processing plant by-products into high-quality biofuel. Hardwood extract from the kraft pulping process and seaweed by-products from the extraction of carrageenan, a natural food additive, will be fermented into organic acids, such as acetic and butyric. The acids then will be chemically upgraded into fuel alcohols, such as ethanol and butanol. Industrial collaborators in the project include Old Town Fuel and Fiber, a nearby kraft pulp mill in Old Town, Maine, and FMC BioPolymer of Rockland, Maine, the only seaweed carrageenan manufacturer in North America. *Chondrus crispus*, the seaweed known as Irish moss, is a source of carrageenan.

Photos by Michael Mardosa